

SA		539.153	
<p>6381. Hybrid orbits for coordination numbers 7 and 9. M. G. Shirshov and M. E. Dyakina. Dokl. Akad. Nauk, USSR, 77 (No. 1) 75-6 (1961) in Russian. Using Kimball's method 2 configurations are examined: (i) with coord. No. 7, a pentagonal bipyramid, symmetry D_{5h}; (ii) with coord. No. 9, a trigonal prism having atoms above the centres of right-angled faces, symmetry D_{3h}. Reduction tables show how 7 and 9 d-bonds resp. can arise in hybridizations of s-, p-, d-, and in all but one case, f-electrons. J. Jacobs.</p>			
A 53		E	
METALLURGICAL LITERATURE CLASSIFICATION			

L 40309-66 ETT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6017302 (A)

SOURCE CODE: UR/0126/66/021/005/0674/0677

AUTHORS: Volkenshteyn, N. V.; Dyakina, V. P.; Novoselov, V. A.; Startsev, V. Ye.

ORG: Institute of Metal Physics, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: Peculiarities of the temperature dependence of electric resistivity of dysprosium at low temperatures

SOURCE: ²⁷Fizika metallov i metallovedeniye, v. 21, no. 5, 1966, 674-677

TOPIC TAGS: dysprosium, electric resistivity, resistivity

ABSTRACT: The electric resistivity of highly purified dysprosium ($R_{300K}/R_{42K} \approx 105$) was measured over the temperature interval 1.5--300K to determine the magnetic contribution to the electric resistivity as a function of temperature. The resistivity was measured on 10 x 1 x 0.5 mm strips made of distilled dysprosium using a cryostat (R. V. Colvin and S. Arazs. Phys. stat. sol., 1964, 4, 73). The results are shown in Fig. 1. These results were found to agree well with the theoretical predictions proposed by A. K. Mackintosh (Phys. Lett., 1963, 4, 140). This is demonstrated in Fig. 2 which shows a comparison.

Card 1/2

UDC: 539.292:537

L 40307-66

ACC NR: AP6017302

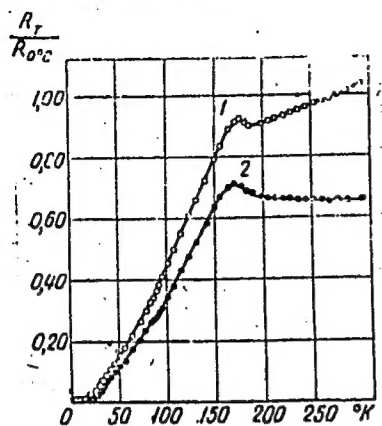


Fig. 1. Electric resistivity of dysprosium: 1 - total resistivity; 2 - magnetic resistivity.

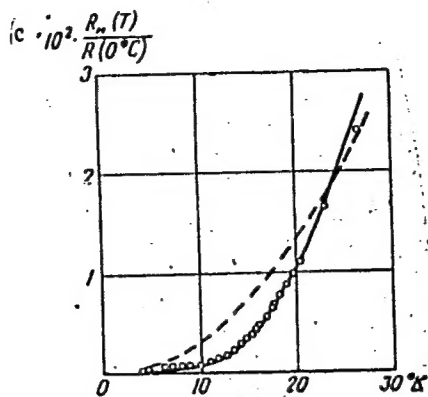


Fig. 2. Low temperature electric resistivity: 0 - experimental results; solid line - curve

$\rho_M = aT^2 e^{-\frac{\Delta}{kT}}$, with $a/R_{0C} = 1.27 \times 10^{-4}$ degrees⁻², $\Delta/k = 30K$; dotted line - curve of T^2 function having common point with experimental results at $T = 24K$.

Orig. art. has: 2 formulas and 3 figures.

Card 2/2MLP SUB CODE: 11/ SUBM DATE: 10Aug65/ ORIG REF: 005/ OTH REF: 004

NIKOLAYEV, N.A.; ANDRYUKHINA, T.D.; VESELYY, V.A.; DYAKIVSKIY, S.I.

Line suspension insulators made of glass. Elektrichestvo no.2:
41-46 F '60. (MIRA 13:5)

1. L'vovskiy politekhnicheskoy institut.
(Electric insulators and insulation)

NIKOLAYEV, N.A., kand.tekhn.nauk; ANDRYUKHINA, T.D., kand.tekhn.nauk;
VESELYY, V.A., inzh.; DYAKIVSKIY, S.I.

Hard-glass suspension insulators for areas with electrically
conducting precipitation. Elektrichestvo no.10:68 0 '60.
(MIRA 14:9)

1. L'vovskiy politekhnicheskoy institut.
(Electric insulators and insulation)

ANDRYUKHINA, T.D., DYAKIVSKIY, S.I., NIKOLAYEV, N.A.

Tempering glass insulators. Stek. 1 kar. 17 no.6:25-28 Je '60.
(Electric insulators and insulations--Testing) (MIRA13:6)

NIKOLAYEV, N.A., kand.tekhn.nauk; ANDRYUKHINA, T.D., kand.tekhn.nauk;
VESELYY, V.A., inzh.; DYAKIVSKIY, S.I.

Features of tempered glass suspension insulators for electric
power transmission lines. Elek. sta. 31 no.12:64-70 D '60.

(MIRA 14:5)

(Electric insulators and insulation)

(Electric lines--Overhead)

34159

S/196/62/000/002/006/023
E194/E155

15.2000

AUTHORS: Nikolayev, N.A., Andryukhina, T.D., Veselyy, V.A.,
and Dyakivskiy, S.I.

TITLE: The manufacture of overhead-line suspension
insulators of hardened glass

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika,
no.2, 1962, 6-7, abstract 2B 35. (Vestn.
elektroprom-sti, no.9, 1961, 54-56).

TEXT: The composition of glass used for insulators is given.
The glass is melted in a regenerative furnace burning natural gas,
with a flame shaped like a horseshoe. The amount of glass is
about 200 kg per m² of furnace area, so that it was possible to
maintain a comparatively low temperature of 1410-1420 °C.
Appropriate quantities of hot glass are delivered to cast-iron
moulds for pressing. At this instant the temperature of the glass
is about 1020 °C. When the glass part of the insulator has been
pressed, the inner hollow of the head is of conical shape and is
then shaped by a special device. The time cycle for forming a
glass insulator part, including mould cooling time, is 1.5 min.
Card 1/2

X

34159

S/196/62/000/002/006/023
E194/E155

The manufacture of overhead-line

Temperature equalisation and heating for hardening is carried out in a conveyor furnace for 15 minutes with a gas temperature of 680 °C. The hot glass parts are then delivered for hardening to air-cooled machines with eight spindles. After hardening, the thermal resistance of hardened parts of insulator ПС-4.5 (PS-4.5) increases from 35 °C (in the unfired condition) to 200 °C, and the mechanical strength increases from 3.0-4.0 up to 10 tons. It is denied that slight damage to the surface layer of the hardened glass leads to complete failure of the part. After hardening, the glass parts are submitted to thermal shock tests with positive and negative temperatures. Insulator strings consisting of 18-22 units are subjected to a one-minute tensile load of 3.6 tons (types PS-4.5; ПСУ-4.5 (PSU-4.5); ПСГ-4.5 (PSG-4.5); 5.5 tons for type ПС-8.5 (PS-8.5); and 7 tons for type ПС-11 (PS-11). The insulators are then exposed for 3 minutes to a continuous flow of sparks which do not form an arc. The insulator fittings are 40-50% lighter than those for porcelain insulators. 2 illustrations, 5 literature references.

Card 2/2 [Abstractor's note: Complete translation.]

X

NIKOLAYEV, N.A., kand.tekhn.nauk; ANDRYUKHINA, T.D., kand.tekh.nauk;
VESELYY, V.A., inzh.; DYAKIVSKIY, S.I., inzh.

Manufacture of hard-glass suspension insulators. Vest. elektroprom.
32 no.9:54-56 S '61. (MIRA 14:8)
(Electric lines--Overhead) (Electric insulators and insulation)

L 40928-66 FWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/AT

ACC NR: AP6015449

SOURCE CODE: UR/0181/66/008/005/1343/1350 -

48
B

AUTHOR: Dykman, I. M.; Tomchuk, P. M.

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR); Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR)

TITLE: Function of electron distribution and mobility in polar semiconductors with a nonparabolic dispersion law

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1343-1350

TOPIC TAGS: electron distribution, electron mobility, electron temperature

ABSTRACT: A donor-type polar semiconductor for which a nonparabolic dispersion law holds is investigated. The interaction is considered between the conducting electrons and the polar lattice vibrations, whose energy quanta are constant $\hbar\omega_0 = \epsilon_0$. It is assumed that the lattice temperature $T_0 \gg 0$; it is shown that the "electron escape" effect is removed if the effective mass of the electrons grows with energy ϵ . For fast electrons, ϵ and the impulse p are related by the approximation $\epsilon = \lambda p^v$, where $v < 4/3$. With a dispersion law such as is valid for InSb, the electron temperature increases monotonically with the function field. The instability of the solution for fields $F > F^*$ is removed, and thereby breakdown cannot occur. Conductivity and mobility differ from those when dispersion follows a parabolic law. Mobility falls as the

Card 1/2

L 46928-66

ACC NR: AP6015449

field intensifies because the mean electron mass increases with their temperature. Curves are plotted for the dependence of the electron temperature in InSb and the relative conductivity on the strength of the applied field. Orig. art. has: 2 figures, 33 formulas.

SUB CODE: 20,29/

SUBM DATE: 29Jul65/

ORIG REF: 006/

OTH REF: 004

17711

Card 2/2

ABLOV, A.V.; D'YAKON, I.A.; IVANOV, N.M.; PROSKIN, L.E.; CHIRCHEN, L.F.

Modification of copper : piccolate. Zhur. neorg. khim. 10 no.3:
628-635 Apr '65. (MIRA 18:7)

1. Institut khim. Akad. Nauk SSSR.

DYAKONENKO, A. K.
A. C. S.

Chemistry & Physics

Quick analysis of clays and grog products. A. I. SHARFSTEIN AND A. K. DYAKONENKO. *Zavodskaya Lab.*, 9, 1227-32 (1940); abstracted in *Chem. Zentr.*, 1942, 1 [21] 2694; *Khim. Referat. Zhur.*, 4 [6] 78 (1911).—The following procedure has been worked out for a rapid analysis of clays and grog products for Al_2O_3 , TiO_2 , and Fe_2O_3 . Fuse a sample with NaOH in a silver crucible. Leach the fused mass with water and allow to settle. Filter an aliquot, acidify the filtrate with HCl, add a solution of hydroxyquinoline in an amount sufficient for the maximum content of Al_2O_3 , and then add a solution of CH_3COONa . After some time heat the solution until it becomes cloudy, make to a definite volume, filter and titrate the excess hydroxyquinoline in an aliquot with a solution of bromine bromate, adding this reagent in some excess, and titrate back iodometrically. Thus determine Al_2O_3 . Filter the remainder of the master solution through the same filter which was used for the solution of Al_2O_3 . Dissolve Ti and Fe oxides with HCl. Determine Fe and Ti in aliquots. As the colorimetric determination of Ti in a HCl solution and in the presence of Fe is not reliable, reprecipitate Ti and Fe with NH_4OH and dissolve the precipitate on the filter with H_2SO_4 . Determine TiO_2 in this solution colorimetrically. As Fe does not settle out completely, add the alkaline filtrate to the solution obtained by dissolving the hydroxides. Determine Fe_2O_3 by the Zimmerman-Reinhardt method. The deviation in the values of results obtained by this method from those obtained by the classical method is from -0.48 to $+0.57\%$ absolute for Al_2O_3 , and from -0.21 to $+0.27\%$ absolute for Fe_2O_3 . Ten analyses can be made within 3.5 hr. An analyst with an assistant can make 450 to 500 analyses per month.
M.V.C. + M.Ho.

UVAROV, S.F., glavnyy red.; POPOV, A.S., red.; D'YAKONENKO, V.M., red.;
GROBMAN, S.M., red.; PETROVA, T.G., red.; KOLESNIKOV, F.M., red.;
KRUTOUS, V.P., tekhn.red.

[Papers at a technical conference on design, construction, manufacture, and use of reinforced concrete poles for electric transmission lines and telephone communications, November 27-30, 1956]
Materialy nauchno-tekhnicheskoy konferentsii po proektirovaniyu, stroitel'stvu, proizvodstvu i ekspluatatsii zhelezobetonnykh opor liniy elektroperedachi i svyazi. [Groznyy] Checheno-Ingushskoe knizhnoe izd-vo, 1957. 163 p. (MIRA 11:6)

1. Nauchno-tekhnicheskaya konferentsiya po proyektirovaniyu, stroitel'stvu, proizvodstvu i ekspluatatsii zhelezobetonnykh opor liniy elektroperedachi i svyazi. Groznyy, 1956.

(Reinforced concrete construction) (Electric lines--Poles)

KAGAN, Ya.I., kand.fiz.-mat.nauk; KOVALENKO, A.D., inzh.; ZHARKIKH, V.Z., inzh.;
BOGDANOV, O.I., inzh.; ZUBAR', V.P., inzh.; D'YAKONENKO, V.S., inzh.

Automatic measurement of shaft diameters during grinding. Vest.mash.
38 no.10:58-59 0 '58. (MIRA 11:11)
(Thickness measurement)

LYUBOMUDROV, V. Ye., kand. med. nauk; AGARKOVA, S. V.; D'YAKONENKO, Ye. K.;
MATEYEVA, K. M.; PAVLOVA, O. A.; SIROTA, G. M.; EYDIS, L. Z.

Combined forms of pneumoconioses in patients with collagenoses.
Terap. arkh. no.9:95-101 '61. (MIRA 15:2)

1. Iz Stalinskogo nauchno-issledovatel'skogo instituta fiziologii
truda.

(LUNGS--DUST DISEASES) (COLLAGEN DISEASES)

D'YAKONOV, A.; MANDRIKOV, V.

Cultural mass work among students. Sov. profsoiuzy 3 no.9:52-54
S '55. (MLRA 8:12)

1. Predsedatel' profkoma Ural'skogo Politeknicheskogo instituta
imeni S.M.Kirova, Sverdlovsk (for D'yakonov) 2. Zamestitel' pred-
sedatelya pravleniya kluba instituta (for Mandrikov)
(Sverdlovsk--Community and school)

D'YAKONOV, A.I.

SEVERUD, Fred, M.; MERRILL, Anthony; SEMENOV, Yu.V. [translator]; D'YAKONOV, A.I., [translator]; LYUBIMOV, S.A. [translator]; VOLODIN, N.V., [translator]; RUSANOV, P.I., redaktor; PAVLOV, V.S., redaktor; GRASIMOV, Ye.S., tekhnicheskiy redaktor

[Protection for people, buildings and equipment from the atomic bomb. Translated from the English.] Protivoatomnaya zashchita liudei, zdaniy i oborudovaniya. Perevod s angliiskogo I.U.V. Semanova i dr. Moskva, izd-vo inostrannoy lit-ry, 1955. 292 p.

(MIRA 9:3)

(Building, Bombproof) (Atomic bomb--Safety measures)

D'YAKONOV, A.; BRANZBURG, Ye.

The people's university is a source of knowledge. Stroitel'
no.2:20-21 F '60. (MIRA 13:5)

1. Starshiy inspektor TSentral'nogo komiteta Profsoyuza
rabochikh stroitel'stva i promyshlennosti stroitel'nykh
materialov (for D'yakonov).

(Building trades--Study and teaching)

VORONOV, F.D., prof.; D'YAKONOV, A.I., kand.tekhn.nauk; DIKSHTEYN, Ye.I., inzh.;
TRIFONOV, A.G., inzh.; LORMAN, V.V., inzh.; KAZAKOV, A.I., inzh.; KOVALIK,
I.S., teknik.

Technological characteristics of Magnitogorsk Metallurgical Combine open-
hearth furnace operations using compressed air in the fuel spray. Stal'
23 no.12:1088-1091 D '63. (MIRA 17:2)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy gorno-
metallurgicheskiy institut.

VORONOV, F. D.; D'YAKONOV, A. I.; LORMAN, V. V.

Oxidation of the open-hearth furnace bath by the hearth
atmosphere and its effect on the indices of smelting. Izv.
vyx. ucheb. zav.; Chern. met. 7 no.6:40-43 '64. (MIRA 17:7)

1. Magnitogorskiy gornometallurgicheskiy institut.

BORUKAYEV, Ch.B.; D'YAKONOV, A.I.

Tuapse zone of lateral shifts (northwestern Caucasus). Dokl. AN
SSSR 155 no. 3:552-554 Mr '64. (MIRA 17:5)

1. Predstavleno akademikom V.I.Smirnovym.

1

Analysis of the Process of Absorption of Gases by Metals. I. Character-
istics of Gas-Metal Systems. A. Dyakonov and A. Samarin (*Izv. Akad.
Nauk S.S.S.R.*, 1945, [Tekhn.], (9), 813-820).--[In Russian] A general
account.--N. A.

ASTM-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS		COMMON VARIABLE	
<p>Analysis of the absorption process of gases by IRON H. Absorption of hydrogen and nitrogen by iron. A D'yakonov and A. Samarin. <i>Bull. acad. sci. U.R.S.S.</i>, 1946, 121-3; cf. <i>ibid.</i> 1945, No. 9. The neg. heat effect of absorption and the close adherence o. this phenomenon to "square-root rule" at all temps. and pressures indicate that in the system H-Fe there is a typical case of soln. of at. H in Fe. The relation between the voly. const. of H in Fe and the temp. is given for α-Fe by $\log K_H = -(1380/T) - 2.51$, γ-Fe <math>\log K_H = -(1220/ T) - 2.336</math>, δ-Fe $\log K_H = -(1340/T) - 2.40$, and liquid Fe $\log K_H = -(1890/T) - 1.71$. Calcs. of ΔF_{Fe} and of ΔH_F show that the allotropic form of Fe has a slight effect on the soly. of H in Fe. N is less metallic than H and therefore it has a greater chem. activity toward Fe. The latter forms 2 known nitrides, Fe_3N and Fe_4N. ΔF_{Fe} of Fe_3N and Fe_4N is 800 and 2380, resp., thus the latter is the less stable of the two. The relation between the soly. of N in Fe and temp. is given for α-Fe by $\log K_N =$ $-(3660/T) + 0.43$, γ-Fe $\log K_N = (371/T) - 1.907$, δ-Fe $\log K_N = -(3770/T) - 0.35$, and liquid Fe \log $K_N = (634/T) - 1.08$. Thermodynamic calcs. show that the absorption of N by α, δ, and liquid Fe results in a soln. of N in the Fe, whereas the absorption of N by γ-Fe results in the formation of the nitride Fe_4N. M. Hoesch</p>		<p>2</p>	
<p>ASM-ISA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>FROM SYMBOL</p>		<p>FROM SYMBOL</p>	
<p>100000 00</p>		<p>001123 000 000 101</p>	

7011
Determination of the metallurgical activity of slags A.
I. D'yakonov U.S.S.R. 103,751 Sept. 26, 1966 The
metallurgical activity of slag during a reaction is mea-
sured by the electrical conductance of the slag. The conductance
measured in the furnace and the slag composition are
related from nomograms. M. I. D'yakonov

Decarburization of molten steel in open hearth
and its dependence on the rate of stirring
1. Introduction
2. Experimental
3. Results
4. Discussion
5. Conclusions

LYAKONOV, A..I.

"Investigation of Gas Movement in Liquids on the Hydraulic Models,"
lecture given at the Fourth Conference on Steelmaking, A.A. Baikov Institute of
Metallurgy, Moscow, July 1-6, 1957

~~1. Form 100 - Form 100 - Form 100~~

D'yakonov, A.I.

137-1958-2-2426

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 32. (USSR)

AUTHORS: Paliy, L.F., Gorin, V.K., D'yakonov, A.I.

TITLE: The Productivity of Open-hearth Furnaces as a Function of the Values of the Parameters of the Bath (Proizvoditel'nost' martenovskikh pechey v zavisimosti ot velichiny parametrov van.)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 42-60. Diskus., pp 160-187

ABSTRACT: A study of the performance of open-hearth furnaces of diverse tonnages revealed that the total time to complete a heat, Z , is expressed by the straight-line equation $Z = \Sigma + K H_{av}$; the first term, Σ (the summation of the amounts of time needed for preparatory servicing, charging, reduction, and tapping), is not a function of the tonnage (T) of the furnace, but is determined solely by the quality of the work-planning and the degree of mechanization; the second term (the sum of the amounts of time needed for melting and the "boil") is proportional to the mean depth of the bath; moreover, the coefficient K is a function of thermal and mechanical factors. An analysis of existing units of specific productivity of open-hearth furnaces, i.e., in terms of the yield,

Card 1/2

137-1958-2-2426

The Productivity of Open-hearth Furnaces (cont.)

revealed their complicated dependence on the design and dimensions of the baths, which makes these units unsuitable for comparing the performances of open-hearth furnaces of equal tonnage. It was found that the hourly productivity of open-hearth furnaces is proportional to certain functions of their dimensions:

$$P \approx M \sqrt[3]{T^2} \quad \text{and} \quad P \approx L \sqrt[3]{H_{av}} \cdot S_o$$

wherein S_o is the area of the bath surface, P is the productivity of the open^o-hearth furnace, and the coefficients M and L (which are proportional to one another) are the absolute units of specific productivity and are independent of the dimensions of the furnaces. The yield of steel, taken in units of $T^{2/3}$, which is called the nominal working capacity of an open-hearth furnace, is determined solely by the quality of work planning and the degree of mechanization. These findings have been verified by data obtained from questionnaires covering 89 foreign and domestic furnaces of from 4 to 320 tons.

Bibliography: 8 references.

G.S.

Card 2/2 1. Furnaces--Production--Theory 2. Melts--Mathematical analysis

D'yakonov, A.I.

137-1958-1-338

Translation from: Referativnyy zhurnal, Metallurgiya. 1958, Nr 1, p 52 (USSR)

AUTHORS: Agapov, V.F., Varshavskiy, A.P., D'yakonov, A.I.

TITLE: A Study of the Sequence and Rate of Fusion of the Free-flowing Materials in a Basic Open Hearth Furnace (Izucheniye posledovatel'nosti i skorosti plavleniya sypuchikh materialov v osnovnoy martenovskoy pechi)

PERIODICAL: V sb.: Primeneniye radioaktivn. izotopov v chernoy metallurgii. Chelyabinsk, Knigoizdat, 1957. pp 120-134

ABSTRACT: The sequence and rate of interaction of the ore and limestone with pig iron in accordance with level and order of charging was studied in seven heats in 380-t open hearth furnaces by means of isotopes P^{32} , F^{59} , and S^{35} , imbedded in pieces of the ladle materials. Appearance of the isotopes in samplings of the metal and slag indicated that the layer of material containing them had liquefied. Curves of the radioactivity of the metal and slag as the heat progresses are adduced. It is noted that the deeper the layer of free-flowing metals, the more time is required to fuse it. The time required for the pig iron and ore to react diminishes as the amount of iron, the speed of charging, and the amount of light-

Card 1/2

137-1958-1-338

A Study of the Sequence and Rate of Fusion (cont.)

weight scrap increase. The mean fusion time of a single layer of ore and limestone in proportion to their level in the bath is determined. A plot is adduced showing the relationship between the time the isotopes appear in the samples and the depth at which they are located. It is established that fusion time is lowest when a single layer of ore is charged onto the hearth and the limestone is in the lowest possible position.

M Kh.

1. Open hearth furnaces--Performance--Analysis
2. Iron--Production
3. Phosphorus isotopes (Radioactive)--Applications
4. Fluorine isotopes (Radioactive)--Applications
5. Sulfur isotopes (Radioactive)--Applications

Card 2/2

137-58-4-6668

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 50 (USSR)

AUTHOR: D'yakonov, A. I.

TITLE: Variation in the Electrical Conductivity of Liquid Slags in the Course of an Open Hearth Heat (Izmeneniye elektroprovodnosti zhidkikh shlakov v protsesse martenovskoy plavki)

PERIODICAL: V sb.: Fiz. -khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 469-478. Diskus. pp 505-512

ABSTRACT: A method for and the results of measurement of the electrical conductivity χ of liquid slag in the course of an open hearth furnace heat are presented. Measurement was by determination of the resistance between two Fe electrodes immersed in the slag. To determine the resistance of the slag skin formed on the electrodes, additional measurements were made during immersion of the electrodes in the metal. χ measurements were made in four heats in 190 and 380 t basic open hearth furnaces. Specimens of slag and metal were taken during the heats. It was found that the χ of the slags varied in the 0.53-12.4 mho/cm range. The change in χ during the process of fusion parallels most closely the change in the values of the CaO/SiO₂ and the

Card 1/2

D'YAKONOV, A. I.

137-1958-3-4779

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 46 (USSR)

AUTHORS: D'yakonov, A. I., Gorin, V. K.

TITLE: A Rotary Spout for the Discharging of Metal From Large Open-hearth Furnaces (Povorotnyy zhelob dlya vypuska metalla iz bol'shegruznykh martenovskikh pechey)

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gorno-metallurg. in-t, 1957, Nr 11, pp 70-76

ABSTRACT: The Magnitogorsk metallurgic combine developed a rotary spout for large open-hearth furnaces, which ensures good control over the filling of two ladles with metal and slag when the melt is discharged. The spout is mounted on two supporting sections set on rollers and may be rotated by means of a power drive from an electric winch. The lining of the spout interlinks with a trough (approximately 400 mm long), attached to the mounting plate of the discharge opening of the furnace.

V P.

Card 1/1

137-58-4-6687

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 54 (USSR)

AUTHORS: Tuzankin, N. M., Gorin, V. K., D'yakonov, A. I.

TITLE: Car-bottom Slag Pockets for Rapid Slag Removal Regardless of its State of Aggregation (Vydvizhnyye shlakoviki dlya bystrogo udaleniya shlaka pri lyubom agregatnom sostoyanii)

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gornometallurg. in-t 1957, Nr 11, pp 77-84

ABSTRACT: The design of car-bottom slag pockets for open-hearth furnaces developed by the Magnitogorsk gornometallurg. in-t (Institute of Metallurgy and Mining) is described. The receiving element (RE) in the form of a lined metal box is mounted on a carriage, and is rolled out by a crane onto the pouring platform. The tops of the slag pockets rest on horizontal beams borne in turn by metal columns fixed into the foundation. Reinforcing wedges 50-80 mm high are provided between the carriage and the RE. After they are pulled out by a crane, the RE, which has fused to the roof of the slag pocket pulls away under the effect of its own weight. The RE is calculated to take 250-270 heats. The weight of a full RE is 200-250 t. The force to roll it clear

Card 1/2

137-58-4-6687

Car-bottom Slag Pockets (cont.)

from the roof is 3-5 t and the time required for replacement during repairs when the furnace is shut down, is 3-4 hours. For future open-hearth furnaces a sunken type of slag pocket is proposed with the RE removed to the slag dump along inclined tunnels below the pouring platform. The benefits provided by car-bottom slag pockets are: elimination of the need to drill and fire charges to clean slag pockets, complete mechanization of slag removal, elimination of the partitions between gas and air slag pockets, and reduction in repair time and in open hearth furnace down time.

A. D.

1. Equipment--Design 2. Equipment--Operation 3. Slags--Removal--Processes

Card 2/2

D'yakonov, A. I.

137-58-5-9078

Translation from: Referativnyy zhurnal, Metallurgiya, 1958. Nr 5, p 47 (USSR)

AUTHORS: Perchatkin, P.N., D'yakonov, A. I.

TITLE: Heat Absorption in the Hearth of an Open-hearth Furnace in the Course of a Heat (Teplopogloshcheniye martenovskoy vanny po khodu plavki)

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gornometallurg. in-t, 1957, Nr 11, pp 85-92

ABSTRACT: Absolute heat absorption (HA) values were determined for in the course of an open-hearth heat. The investigations were carried out in an 185-ton gas-heated open-hearth furnace (OHF) with carburization with tar. The heat flows (HF) were measured by means of a calorimeter of VNIIT design. The HF's vary sharply in the course of an open-hearth smelting; the direct flow, passing from the flame to the hearth, varies more than the return flow from the hearth. A graph is presented showing the variations of the direct HF along the hearth. The absolute value of the direct HF is greater at the end than it is at the midway point in the scrap-charging process. The return HF remains practically constant throughout the length and width of the hearth.

Card 1/2

137-58-5-9078

Heat Absorption in the Hearth of an Open-hearth Furnace (cont.)

During the charging of scrap the HA varied from 340,000 kcal/m² at the second opening to 140,000 kcal/m² at the fifth one. A similar nonuniformity was observed in other stages of smelting also. The HF also varies from one switching to another. The variations of the direct and return HF's in the course of a smelting are shown in the form of a graph. The HA, which at the time of charging of limestone amounted to 260-300 thousand kcal/m², decreased to a value of 130-140 thousand kcal/m² after the limestone had been heated for a period of 3-5 minutes. An analogous situation is observed in the course of charging of Fe ore. After the introduction of the metal scrap charge into the furnace, the HA amounted to 260-340 thousand kcal/m², but after 1.5 hrs of heating it dropped to a value of 140-160 thousand kcal/m². At the end of the smelting period and throughout the boiling stage, the HA diminishes smoothly from 120-160,000 to 30-50,000 kcal/m². The HA is also shown to be a function of the combustion rate of C in the hearth. The HA, which prior to the introduction of Fe-Mn into the hearth had a value of 90-120,000 kcal/m² (the hourly oxidation rate of C being equal to 0.20-0.25%), is reduced to a value of 40-55,000 kcal/m² three to five minutes after the introduction of the Fe-Mn.

S.I.

1. Open hearth furnaces 2. Heat--Absorption 3. Temperature--Measurement 4. Calorimeters--Applications
Card 2/2

PERCHATKIN, P.N.; PANOV, A.S.; BEZDENEZHNYKH, A.A.; BIGLYEV, A.M.; LATIMIN, V.N.;
D'YAKONOV, A.I.

Sulfur distribution between metal and slag during conversion
smelting of low-manganese pig iron. Izv. vys. ucheb. zav.: chern.
met. no.1:33-40 '60. (MIRA 13:1)

1. Magnitogorskiy gorno-metallurgicheskiy institut.
(Open-hearth process) (Desulfuration)

VORONITSYN, K.I., kand. tekhn. nauk, red.; TIZENGAUZEN, P.E., kand. tekhn. nauk, red.; NADBAKH, M.P., red.; TANTSEV, A.A., starshiy nauchnyy sotr., red.; ABRAMOV, S.A., kand. tekhn. nauk, red.; ABRAMOV, D.A., red.; BOGDANOV, N.I., starshiy nauchnyy sotr., red.; VINOOROV, G.K., kand. tekhn. nauk, red.; GAVRILOV, I.I., starshiy nauchnyy sotr., red.; GUSARCHUK, D.M., starshiy nauchnyy sotr., red.; DIYAKONOV, A.I., red.; ZAV'YALOV, M.A., kand. tekhn. nauk, red.; ZARETSKIY, M.S., starshiy nauchnyy sotr., red.; KACHELKIN, L.I., starshiy nauchnyy sotr., red.; KISHINSKIY, M.I., kand. tekhn. nauk, red.; KOLTUNOV, B.Ya., starshiy nauchnyy sotr., red.; OSIPOV, A.I., kand. tekhn. nauk, red.; SHINEV, I.S., kand. ekon. nauk, red.

[Materials of the enlarged session of the Scientific Council of the Central Scientific Research Institute for Mechanization and Power Engineering in Lumbering on problems concerning power engineering and the electrification of the lumber industry]
Materialy rasshirennoi sessii Uchenogo soveta TsNIIME po voprosu energetiki i elektrifikatsii lesnoi promyshlennosti. Moskva, 1961. 75 p.

(MIRA 15:4)

(Continued on next card)

VORONITSYN, K.I.----(continued) Card 2.

1. Khimki. Tsentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i energetiki lesnoy promyshlennosti. 2. Nachal'nik Tsentral'nogo byuro tekhnicheskoy informatsii lesnoy promyshlennosti (for Nadbakh). 3. Direktor Tsentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Voronitsyn). 4. Uchenyy sovet Tsentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for D'yakonov). 5. Nachal'nik otdeleniya energetiki i sredstv avtomatizatsii Tsentral'nogo nauchno-issledovatel'skogo instituta mekhanizatsii i energetiki lesnoy promyshlennosti (for Zaretskiy).

(Lumbering)

(Electric power)

ROSTOVTSEV, K.O.; VOSKRESENSKIY, I.A.; D'YAKONOV, A.I.

New data on the geology and gas and oil deposits of the eastern
regions of the Kuban. Trudy KF VNII no.6:38-66 '61. (MIRA 15:2)
(Kuban--Petroleum geology) (Kuban--Gas, Natural--Geology)

D'YAKONOV, A.I.

Geology and prospects for finding gas and oil in Tuapse District,
Krasnodar Territory. Trudy KF VNII no.6:67-90 '61. (MIRA 15:2)
(Tuapse District--Petroleum geology)
(Tuapse District--Gas, Natural--Geology)

D'YAKONOV, A.I.; ROSTOVTSEV, K.O.; VOSKRESENSKIY, I.A.

New data on the geology of the Khadyzhensk and Shirvan-
Bezvodnenskiy regions. Trudy KF VNII no.10:67-81 '62.
(MIRA 15:11)

(Caucasus--Geology)

VOSKRESENSKIY, I.A.; ROSTOVTSSEV, K.O.; D'YAKONOV, A.I.

Geology of the Barakayevskoye field based on new data.

Trudy KF VNII no.10:89-97 '62. (MIRA 15:11)

(Krasnodar Territory--Petroleum geology)

(Krasnodar Territory--Gas, Natural--Geology)

D'YAKONOV, A.I.; MITIN, N.Ye.; SHELKOPLYAS, P.A.

Study of the Permian and Triassic sediments of the Belaya
Basin in the northwestern Caucasus. Trudy KF VNII
no.10:149-157 '62. (MIRA 15:11)
(Belaya Valley (Krasnodar Territory)—Geology, Stratigraphic)

D'YAKONOV, A.I.; KOROTKOV, B.S.

Geological structure and oil and gas potentials of the
southern slope of the northwestern Caucasus. Neftegaz.
geol. i geofiz. no.3:6-9 '63. (MIRA 16:8)

1. Krasnodarskiy filial Vsesoyuznogo nauchno-issledovatel'-
skogo neftegazovogo instituta.

GORLOV, S.I.; D'YAKONOV, A.I.

Prospecting for oil and gas in the maikop sediments of the
eastern Kuban. Neftegaz, geol. i geofiz. no.11: 6-8'63
(MIRA 17:7)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno -
issledovatel'skogo instituta.

GORLOV, S.I.; D'YAKONOV, A.I.

New data on the structure, and oil and ~~gas~~ potentials of the
Armavir-Nevinnomyssk region. Izv. vysh. ucheb. zav.; ~~neft' i~~
gaz 6 no.3:9-13 '63. (MIRA 16:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova
i Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-
issledovatel'skogo instituta.

(Russia, Southern--Petroleum Geology)
(Russia, Southern--Gas, Natural--Geology)

ALEKSIN, G.A.; GORLOV, S.I.; D'YAKONOV, A.I.

Determining the time of the formation of gas pools. Geol.
nefti i gaza 7 no.3:43-48 Mr '63. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy
neftyanyy institut, Moskva, i Krasnodarskiy filial Vsesoyuznogo
neftegazovogo nauchno-issledovatel'skogo instituta.
(Maikop region—Gas, Natural—Geology)

GORLOV, S.I.; D'YAKONOV, A.I.; NESTEROV, L.V.; SOKOLOV, P.N.

New gas-bearing area in the northern foothills of the Greater
Caucasus. Geol. nefti i gaza 7 no.5:39-43 My '63.

(MIRA 16:6)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-
issledovatel'skogo instituta i Nauchno-promyslovoye upravleniye
Khadyshenneft'.

(Caucasus—Gas, Natural—Geology)

D²YAKONOV, A.I.

facies characteristics of the lower Cretaceous sediments of the southern slope of the northwestern Caucasus in connection with prospects for finding oil and gas. Izv.vys.ucheb.zav., geol. i razv. 6 no.11:73-85 N '63. (MIRA 18:2)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

GORLOV, S.I.; D'YAKONOV, A.I.; ALEK SIN, G.A.

New oil and gas bearing region in the eastern Kuban. Neftegaz.
geol. i geofiz. no.6:35-39 '64. (MIRA 17:8)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-
issledovatel'skogo instituta i Vsesoyuznyy nauchno-issledovatel'-
skiy geologorazvedochnyy neftyanoy institut, Moskva.

D'YAKONOV, A.I.

Prospects for finding oil and gas in the Cretaceous sediments
of the Black Sea region. Vest. Mosk. un. Ser. 4: Geol. 19 no.1:
20-27 Ja-F '64. (MIRA 18:2)

1. Kafedra geologii i geokhimii goryuchikh iskopayemykh Moskov-
skogo universiteta.

D'YAKONOV, A.I.

Geological prerequisites for oil and gas prospecting and prospecting plan for the Black Sea region in Krasnodar Territory. Geol. nefti i gaza 9 no.6:32-36 Je '65. (MIRA 18:8)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

KOSYKH, N. N. (Veterinary Doctor) and D'YAKONOV, A. T. (Veterinary Technician,
B-Khoulmutets Veterinary Section, Dobrovsk District, Lipetsk Oblast'). (Abstracted
by NOSKOV, A. I.)

"Treatment of herpes tonsurans".....
Veterinariya, vol. 39, no. 3, March 1962 pp. 32

D'YAKOV, I.P., nauchyy sotrudnik

Natural draft ventilation in standard dairy barns. Veterinariia 42
no.4:91-94 Ap '65. (MIRA 18:6)

2. Moskovskoye otdeleniye Vsesoyuznogo projektirov. i nauchno-
issledovatel'skogo instituta tipovogo i eksperimental'nogo
projektirovaniya sel'skokhozyaystvennykh predpriyatiy i
kompleksov i predpriyatiy po khraneniyu i pererabotke zerna.

BYE-N-V, L. Y2.

Calculating rate of return operating without debt, Co. 2, 1980
8 no. 3135, 36 '80 (6-24-80)

D.YAKONOV, B.P.

Principles of using amplitude and phase characteristics of an
electromagnetic field in electrical prospecting. Izv.AN SSSR.
Ser.geofiz. no.10:1207-1210 0 '56. (MIRA 10:1)

1. Akademiya nauk SSSR Geofizicheskiy institut.
(Prospecting--Geophysical methods)

D'YAKONOV, B. P.

49-3-15/16

AUTHOR: Kirillov, F. A.

TITLE: Conference of junior research workers, engineers and aspirants of the Institute of the Physics of the Earth, Ac. Sc., U.S.S.R. (Konferentsiya mladshikh nauchnykh sotrudnikov, inzhenerov i aspirantov Instituta Fiziki Zemli AN SSSR).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya"
(Bulletin of the Ac. Sc., Geophysics Series), 1957,
No. 3, pp. 411-415 (U.S.S.R.)

ABSTRACT: The conference was held on December 24-26, 1956, 21 papers were read relating to work completed in 1955 and 1956. In this report the contents of the individual papers are briefly summarised. B. P. D'yakonov read a paper "diffraction of Electro-Magnetic Waves on Spherical Inclusions in a Two-Layer Medium".

D'yakonov, B. P.

49-6-12/21

AUTHOR: D'yakonov, B. P.

TITLE: Nature of the electric currents of the Earth and their investigation at the bottom of the ocean. (Priroda zemnykh elektricheskikh tokov i ikh issledovaniye na dne okeana).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series), 1957, No.6, pp. 800-802 (U.S.S.R.)

ABSTRACT: In spite of the fact that there is a great deal of work published on the study of currents in the sea, the author points out that most of the experimental work is extremely superficial. Recording of the electric currents in the sea by various authors was effected mainly by means of pick-ups submerged to shallow depths around the shores and, so far, there is no comparison between the electric currents in the sea and on the land recorded simultaneously by means of identical automatic recording apparatus. A further study of the natural electric currents will have to be made at larger depths and it will also be necessary to utilise the sea as a screen for certain frequencies of the electromagnetic field of external sources for the purpose of detecting the electromagnetic signals emanating from the depths of the Earth. It is shown that at a depth of 2 km disturbances with periods

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49-6-12/21

Nature of the electric currents of the Earth and their investigation at the bottom of the ocean. (Cont.)

below 15 minutes will be appreciably weakened and this effect can be utilised for attempting to record electromagnetic disturbances of a new nature which so far have not been studied. No new experimental data are given. In conclusion the author outlines some of the problems, the answers to which could be revealed by means of the electromagnetic disturbances with sources located inside the Earth: the very fact of their existence will provide additional information on the state and the structure of the internal regions of our planet; if a correlation will be observed between the recordings of currents at distant spots, there will be adequate justification for the conclusion of the existence of a unified system of currents which encompasses large regions of the Earth; the seismic activity of the depth of the Earth may cause so far unknown electromagnetic disturbances which encompass limited regions and this would be of great interest since it may permit solving the difficult problem of forecasting earthquakes.

There are 1 table and 14 references, 10 of which are Slavic.

SUBMITTED: February 23, 1956.

ASSOCIATION: Institute of Physics of the Earth, Ac.Sc.USSR.

Card 2/2 (Akademiya Nauk SSSR Institut Fiziki Zemli).

AVAILABLE: Library of Congress

3.9000

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SOV/49-59-9-4/25

AUTHOR: D'yakonov, B. P

TITLE: Diffraction of Electromagnetic Waves by a Circular
Cylinder in a Uniform Half-Space

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
1959, Nr 9, pp 1332-1343 (USSR)

ABSTRACT: The aim of the present work is to solve the problem of the diffraction of electromagnetic waves by a cylindrical inclusion placed in a uniform half-space. The solution is expressed in a form which is convenient in certain calculations in connection with electrical prospecting. The problem is formulated in the following way. Consider an alternating electromagnetic field having a frequency ω which is produced by a source placed in air or on the Earth's surface. Under the Earth's surface there is an infinitely long cylindrical inclusion having a circular cross-section whose axis is parallel to the surface. The Earth and the inclusion are looked upon as uniform and anisotropic. In order to simplify the problem it is assumed that in the field produced by the source there is only one component of the electric field (parallel to the axis of the cylinder and constant along this axis). It is required

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SOV/49-59-9-4/25

Diffraction of Electromagnetic Waves by a Circular Cylinder in a Uniform Half-Space

to determine the electromagnetic field on the Earth's surface and also inside the Earth. The following symbols are used: σ - conductivity of the cylinder, ϵ - dielectric constant, a - radius, h - distance from the axis of the cylinder to the Earth's surface. The characteristics of the Earth and the air are given subscripts 1 and 2. The magnetic permeability of the media is considered to be the same. It is well known (Ref 2) that at all ordinary points in space, a monochromatic electromagnetic field satisfies the wave equation given by Eq (1), where $k = (\mu\sigma\omega - \epsilon\omega^2)^{1/2}$ is the wave number in the medium. The vector potential A is given by Eq (2), and the relation between the electric field and the vector potential by Eq (3), since in the case under consideration $\text{div } A = 0$. On the boundaries between media with different electrical properties there should be a continuous tangential component of both electric and magnetic fields. At infinity, the diffracted field should obey the radiation principle. In this way the problem formulated above is reduced to the

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SOV/49-59-9-4/25

• Diffraction of Electromagnetic Waves by a Circular Cylinder in a Uniform Half-Space

solution of Eq (1) subject to given conditions on the boundaries, the properties of the field at the source, and the conditions at infinity. It follows from the formulation of the problem that there exists only one component of the vector potential both for the primary and the diffracted fields. From Eqs (2) and (3) it is easy to show that for the z-component of the vector potential the boundary conditions are of the form given by Eq (4), where n indicates the normal to the surface, and A_z and A_z^* are vector potentials on either side of the boundary. The problem is solved by separating the variables. The plane earth-air boundary is replaced by a cylindrical surface of radius R_0 so that the distance h remains constant (Fig. 1). The problem is then reduced to that of two cylinders whose axes are parallel but do not coincide. From the solution of this problem, the required solution is obtained by putting $R_0 \rightarrow \infty$ at constant h . The wave equation is then transformed to polar coordinates (Eqs 5, 6, and 7) in which case the boundary conditions assume the form given by Eqs (8) and (9). The solutions are written down in the

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SOV/49-59-3-4/25

Diffraction of Electromagnetic Waves by a Circular Cylinder in a Uniform Half-Space

form of series (Eqs 10, 11 and 12) whose constants are obtained from the boundary conditions. It is shown that the magnitude of the diffracted field reflected from the Earth's surface cannot always be neglected. The solution is not substantially altered if the vector potential is introduced by the relation $\text{grad } \Phi = \text{rot } \mathbf{A}$. It follows that it is not difficult to extend the present solution to the case where the magnetic field is along the z-axis and is independent of z. There are 1 figure and 3 Soviet references, of which 3 are translations from English.

ASSOCIATION: Akademiya nauk SSSR. Institut fiziki Zemli
(AS USSR, Institute of Physics of the Earth)

SUBMITTED: December 1, 1956

Card 4/4

SOV/49-59-11-6/28

AUTHOR: D'yakonov, B.P.

TITLE: Diffraction of Electromagnetic Waves by a Sphere
Placed in a Half-space

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
1959, Nr 11, pp 1579-1590 (USSR)

ABSTRACT: The problem is solved for a sphere having an arbitrary conductivity and placed in a conducting half-space with a plane boundary. The solution is obtained in a form convenient in low frequency electrical prospecting. The corresponding problem for a cylindrical inclusion was solved by the present author in Nr 9 (1959) of this journal. The magnetic permeability is assumed to be the same for the two media and the electromagnetic field is taken to be polarized so that there is only one component of the electrical field. Maxwell's equations are then solved subject to the usual boundary conditions, namely, that the tangential components of the electrical and magnetic fields are continuous across boundaries and the radiation principle holds at infinity. The wave equation for the problem is given by Eq (2), where

Card 1/3 U is the Hertz function defined by Eq (1) (Ref 3). Since

SOV/49-59-11-6/28

Diffraction of Electromagnetic Waves by a Sphere Placed in a Half-space

there are three media (air, earth and the inclusion), there are three functions U and these must satisfy Eqs (2a), (2b) and (2B). The boundary conditions (cf Fig 1) are given by Eqs (3a) and (3b). Assuming that the source is in the air, the solution is sought in the form of the series given by Eqs (6), (7) and (8) and the coefficients are determined from the boundary conditions. Formulae are obtained for the expansion coefficients in the form of an infinite system of algebraic equations. In the first approximation the final solution takes into account the effect of diffracted waves reflected from the boundary of the half-space on the current distribution both in the sphere and the adjoining regions. Thus the solution takes into account not only the effect of the uniform half-space on the primary field but also the effect of the interaction of the sphere with the "plane" boundary. There are 7 references, 6

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SOV/49-59-11-6/28

Diffraction of Electromagnetic Waves by a Sphere Placed in a
Half-space

of which are Soviet (2 translations from English)
and 1 English, and 1 figure.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli
(Academy of Sciences USSR, Institute of Physics of
Earth)

SUBMITTED: January 25, 1957 ✓

Card 3/3

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86313
S/049/60/000/007/004/009/XX
E032/E314

AUTHOR: D'yakonov, B.P.

TITLE: Asymptotic Expressions for the ¹²Electromagnetic
Fields Due to Cylindrical Inclusions

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya
geofizicheskaya, 1960, No. 7, pp. 954 - 958

TEXT: In order to investigate the principal features of
anomalous electromagnetic fields due to inclusions under the
Earth surface, it is frequently convenient to replace these
inclusions by simple geometrical forms, e.g. cylindrical
bodies. The present paper derives expressions for the
electromagnetic fields due to massive extended objects in
the form of right circular cylinders. Use is made of the
solutions obtained by the author in a previous paper
(Ref. 1) for the diffraction of electromagnetic waves by a
right circular cylinder in a half space. It is shown that
the vertical component of the anomalous magnetic field
decreases along the surface at least as $1/y^3$ while the

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S/049/60/000/007/004/009/XX
E032/E314

Asymptotic Expressions for the Electromagnetic Fields Due
to Cylindrical Inclusions

electric component and the horizontal component of the
magnetic field decrease as $1/y^2$. These results confirm
that it is useful to measure the horizontal components of
anomalous electromagnetic fields in searches for local
anomalies. It is also shown that the vertical component of
the anomalous ¹/₂ magnetic field will be much stronger in regions
where there are considerable irregularities in the medium in
the horizontal directions and this is in agreement with
experimental data.

There are 3 references: 2 Soviet and 1 non-Soviet.

Card 2/3

86313
S/049/60/000/007/004/009/XX
E032/E314

Asymptotic Expressions for the Electromagnetic Fields Due to
Cylindrical Inclusions

ASSOCIATION: Akademiya nauk SSSR Institute fiziki Zemli
(Academy of Sciences of the USSR, Institute
of Physics of the Earth)

SUBMITTED: September 10, 1957

Card 3/3

D'YAKONOV, B. V. TIKHONOV, A.N., IVANOV, A.G., and TROITSKAYA, V.A.

"Relationship Between Earth Currents and Earthquakes" Tr. Geofiz. in-ta AN SSSR,
No 25, 1954, 181-191

A relationship between the propagation of seismic waves and the appearance of an electromagnetic perturbation, the so-called seismoelectric effect is held possible. The effect originates in slow undulations of the terrestrial core which may propagate as an elastic wave. The noticed coincidences of seismic waves and electric perturbations indicate the necessity of recording the slow motions of the terrestrial core. (RZhFiz, No 10, 1955)

D'YAKONOV, D. I.
~~Dakhnov, V. N.~~

Termicheskiye Issledovaniya Skvazhin [Thermal Research on Oil Wells By] V. N. Dakhnov
I D. I. D'Yakov.
Moskva, Gostoptekhnizdat, 1952.
251 P. Diagr., Tables.
"Literatura": P. 246-251.

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DAKHNOV, Vladimir Nikolayevich, professor; D'YAKONOV, D.I., redaktor; PETRO-
VA, Ye.A., redaktor; POLOSINA, A.S., tekhnicheskii redaktor

[Interpretation of the results of geophysical studies of well pro-
files] Interpretatsiia rezul'tatov geofizicheskikh issledovanií raz-
rezov skvazhin. Moskva, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-
toplivnoi lit-ry, 1955. 492 p. ---- [Album of charts for inter-
preting the results of well studies by resistance methods; an ap-
pendix] ---- Al'bom paletok dlia interpretatsii rezul'tatov issle-
dovaniia skvazhin metodom soprotivlenii; prilozhenie. 17 graphs
(in portfolio) (MIRA 9:3)
(Prospecting--Geophysical methods)

D'YAKONOV, D.I., dotsent.

Improving the interpretation and utilization of applied geophysical
data in the petroleum industry. Trudy MNI no.15:5-12 '55.

(MLRA 9:8)

(Prospecting--Geophysical methods) (Petroleum engineering)

D'YAKONOV, D. I. Doc Geol-Min Sci -- (diss) "Thermal methods of solving geological and petroleum ^{mining} problems." Mos, 1958. 30 pp (Min of Higher Education USSR. Mos Order of Labor Red Banner Inst of Petroleum-Chemistry and Gas Industry im I. M. Gubkin. Chair of ^{Mineral} ~~Mineral~~ Geophysics), 150 copies (KL, 52-58, 99)

3(5)28(5)

PHASE I BOOK EXPLOITATION

SOV/1262

D'yakonov, Dmitriy Ivanovich

Geotermiya v neftyanoy geologii (Application of Geothermal Surveys in Petroleum Geology) Moscow, Gostoptekhizdat, 1958. 276 p. 2,500 copies printed.

Ed.: Dakhnov, V.N.; Exec. Ed.: Dobrynina, N.P.; Tech. Ed.: Mukhina, E.A.

PURPOSE: This volume is intended for geologists, geophysicists, and petroleum engineers and may also be used by students at petroleum institutes. As a textbook it can be used as a guide in conducting and interpreting geothermal surveys in mining and in the solution of hydrogeological or engineering-geological problems. It is also useful in the study of the geothermal characteristics of coal, salt and other mineral deposits.

COVERAGE: This work discusses the history of the geothermal method and evaluates its scientific and practical value. It further describes the theoretical principles, the methodology of exploration and the interpretative techniques essential in geothermal borehole surveying. Particular attention is paid to the geothermal surveying of oilwells. By collecting and interpreting a large amount of basic field data, the author establishes the thermal characteristics

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of many oil-bearing districts of the USSR. He also establishes basic relationships between the many factors bearing on the problems of exploration or exploitation of oil and gas producing fields. The author thanks Professor V.N. Dakhnov for his assistance in editing the work. There are 48 figures, 24 tables and 224 references, of which 169 are Soviet, 50 English, 4 German, and 1 French.

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D³YAKONOV, D. I.

Geothermal investigations in areal geology and subsurface tectonics.
Geol. нефти i gaza 4 no.11:50-54 N '60. (MIRA 13:11)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
im. akademika Gubkina.

(Earth temperature)

DAKHNOV, V.N.; KOBRAKOVA, V.N.; PECHERNIKOV, V.F.; BENDEL'SHTEYN, B.Yu.;
KHOLIN, A.I.; POZIN, L.Z., D'YAKONOV, D.I.; LATYSHEVA, M.G.;
DOBRYNIN, V.M.; LARIONOV, V.V.; NEYMAN, Ye.A.; LEBEDEV, A.P.

Terminology and symbols used in applied geophysics. Prikl. geofiz.
no.27:223-235 '60. (MIRA 13:12)
(Prospecting—Geophysical methods)

VASIL'YEV, Yu.M.; D'YAKONOV, D.I.; CHARYGIN, M.M.

Most important physical parameters of the deep-seated structures
of the Caspian Lowland. Trudy MINKHIGP no.43:178-191 '63.
(MIRA 17:4)

D'YAKONOV, D.I.

Some regularities in the distribution of the natural thermal
field and possibilities of using geothermy. Trudy MINKHIGP
no. 50:208-214 '64 (MIRA 18:2)

ACC NR: AT6028387

SOURCE CODE: UR/0000/65/000/000/0267/0274

AUTHOR: D'yakonov, D. I.

ORG: none

TITLE: Geothermal investigations in oil- and gas-bearing regions

SOURCE: International Geological Congress. 22d, New Delhi, 1964. Geologicheskkiye rezul'taty prikladnoy geofiziki (Geological results of applied geophysics); doklady sovetskikh geologov, problema 2. Moscow, Izd-vo Nedra, 1965, 267-274

TOPIC TAGS: ~~geology~~, ~~geologic conference~~, geothermal exploration, petroleum prospecting, gas prospecting, *prospecting*, *geologic exploration*

ABSTRACT: In the present paper the possibilities of applying geothermal methods in prospecting for oil and gas are analyzed. The use of these methods in oil- and gas-bearing regions of the USSR and other countries made it possible to establish the principal regularities in the distribution of the Earth's thermal field based on lithological, tectonic, and geohydrological factors. Geothermal prospecting methods provide the solution of the following problems: a) determination of temperatures and geothermal characteristics of subsurface formations, b) location of various minerals by investigation of local thermal fields produced by exothermal and endothermal processes; c) detection of inflows and annular circulation of water, water-yielding and water-absorbing formations, position and characteristics of cement

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ACC NR: AT6028387

in the annular space; d) more exact definition of geological structure of oil and gas fields and study of deep-seated tectonics; e) study of geohydrological and frost (in permafrost areas) characteristics of oil and gas fields; f) control of the development of oil and gas fields. The most important trends of geothermal research are as follows: a) development of theoretical basis of thermodynamics and thermal regime of the Earth's crust; b) systematic determinations of thermal properties of rocks and formation fluids; c) compilation of local and regional geothermal maps; d) preparation of instructions for conducting geothermal investigations in oil and gas fields.

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AUTHOR: Vasil'yev, Yu. M.; D'yakanov, D. I.; Charygin, M. M.

ORG: Moscow Institute of Petroleum Chemistry and Gas Industry im. I. M. Gubkin
(Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti)

TITLE: Temperature of the deep layers of the Caspian Depression on the basis of data from the Aral-Sor Superdeep Borehole

SOURCE: AN SSSR. Doklady, v. 168, no. 4, 1966, 871-873

TOPIC TAGS: geophysics, thermogram

ABSTRACT: The authors present the first results of geothermal investigations made in the Aral-Sor superdeep borehole which is being drilled in the Caspian depression. The data are as follow:

<u>Depth, m</u>	<u>Temperature, °C</u>
500	27
1,000	40
2,000	56
3,000	71
4,000	87
5,000	123
5,941	150

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ACC NR: AP7000247

The analysis of geothermograms revealed that the sedimentary complex in the depression consists of deposits which differ in thermal properties; there are many layers which differ in lithological composition and heat conductivity. This paper gives full details on the geothermal gradient for each of the stratigraphic components of the geological cross section. This paper was presented by Academician D. I. Shcherbakov on 6 January 1966. [JPRS: 37,058]

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PANASENKO, S.I., inzh.; SHCHERBINA, E.G., inzh.; AKSENOV, V.V., ~~kad.~~ tekhn.
nauk; D'YAKONOV, D.N., inzh.; MIRONOV, N.T., inzh.

Testing experimental sections of the support of the AKD unit.
Ugol'. prom. no.6:54-57 N-D '62. (MIRA 1612)

1. Toretskiy mashinostroitel'nyy zavod (for Panasenکو, Shcherbina).
2. Institut gornogo dela im. Skochinskogo (for Aksenov, D'yakonov, Mironov).

(Mine timbering—Testing)

AKSENOV, V.V., kand. tekhn. nauk, nauchnyy rukovoditel'; D'YAKONOV,
D.N., inzh.; MIRONOV, N.T., inzh.; YAKOVLEVA, L.A., red.;
GERASIMOV, V.F., technolog

[Optimum parameters of a system of working steep seams with
stopping machinery and the efficiency of mechanized mining]
Optimal'nye parametry sistemy razrabotki krutykh plastov
ochistnymi agregatami i effektivnost' agregatnoi vyemki;
kratkii nauchnyi otech. Moskva, AN SSSR, 1963. 46 p.

(MIRA 16:10)

1. Akademiya nauk SSSR. Laboratoriya podzemnoy razrabotki
ugol'nykh mestorozhdeniy.

(Donets Basin--Coal mines and mining)

D'YAKONOV, D.N., inzh.

Basic parameters of a stope for the AKD unit. Nauch. soob IGD
20:72-81 '63. (MIRA 16:10)

(Donets Basin--Coal mining machinery)

SHAKHOV, A.A.; STANKO, S.A.; KHAZANOV, V.S.; D'YAKONOV, F.S.

Spectral characteristics of plants. Bot.zhur. 44 no.12:1681-1693
D '59. (MIRA 13:4)

1. Institut fiziologii rasteniy AN SSSR, i Vsesoyuznyy nauchno-
issledovatel'skiy svetotekhnicheskiy institut, Moskva.
(Arctic regions--Leaves--Optical properties)

D' YAKONOV, F. V.

Economic Geography

Dissertation: "Geography of the Economy of Southwestern Yakutsk ASSR." Cand Geog
Sci, Moscow State Pedagogical Inst imeni V. I. Lenin, 22 Mar 54. (Vechernyaya Moskva
Moscow, 13 Mar 54)

SO: SUM 213, 20 Sep 1954

D'YAKONOV, F.V.; NAUMOV, G.V.

"Economic and Geographic Characteristics of the Southwestern Part of the
Yakut A.S.S.R."

p. 6 Trudy Akad. Nauk SSSR, Yakutsk Filial, No. 1, 1956.